IN THE CLAIMS

Please amend the claims as follows:

Claims 1-16 (Canceled).

Claim 17 (New): A process for preparing an alkene oxide, comprising

(i) providing a stream S1 comprising a compressed, liquid alkene;

(ii) depressurizing at least part of the stream S1 with absorption of heat and with at least partial vaporization of the liquid alkene; and

(iii) reacting the alkene obtained in (ii) with a hydroperoxide in the presence of at least one solvent and at least one catalyst to form a mixture comprising an alkene oxide and the at least one solvent.

Claim 18 (New): A process as claimed in claim 17, wherein the alkene is propene, the hydroperoxide is hydrogen peroxide, the catalyst is a titanium silicalite catalyst and the solvent is methanol.

Claim 19 (New): A process as claimed in claim 18, wherein the stream S1 in (i) comprises liquid propene at a pressure in the range from 20 to 35 bar and a temperature in the range from 5 to 30°C.

Claim 20 (New): A process as claimed in claim 18, wherein at least part of the stream S1 is depressurized to a pressure in the range from 4 to 10 bar.

Claim 21 (New): A process as claimed in claim 17, wherein in (ii) the stream S1 is depressurized into at least one heat exchanger and the heat absorbed during depressurization

is taken from at least one refrigerant to form a cooled refrigerant, and wherein the cooled refrigerant is used for cooling purposes in at least one sub-operation of the process.

Claim 22 (New): A process as claimed in claim 21, wherein the sub-operation of the process includes condensing a vapor which consists essentially of the alkene oxide and is obtained by separating the alkene oxide from a mixture (M1) comprising the alkene oxide and the at least one solvent by distillation.

Claim 23 (New): A process as claimed in claim 22, wherein the mixture (M1) is obtained from a process comprising:

(iv) reacting the alkene obtained in (ii) with a hydroperoxide in the presence of at least one solvent and at least one catalyst to give a mixture (M0) comprising the alkene oxide, the alkene and the at least one solvent; and

(v) separating the alkene from the mixture (M0) to give a mixture (M1) comprising the alkene oxide and the at least one solvent.

Claim 24 (New): A process as claimed in claim 23, which further comprises:

(vi) dissolving the vaporized alkene obtained in (ii) in at least one of the solvents used in (iii) or (iv) to give a solution;

(vii) introducing the solution obtained in (vi) into the apparatus used for the reaction of (iii) or (iv).

Claim 25 (New): A process as claimed in claim 24, wherein on dissolution of the alkene oxide in (vi) heat of solution is evolved, and said heat of solution is removed via a heat exchanger by means of river water.

Claim 26 (New): A process as claimed in claim 24, wherein the solvent used in (iii) is circulated.

Claim 27 (New): A process for preparing an alkene oxide, which comprises:

(i) providing a stream S1 comprising a compressed, liquid alkene;

(ii) depressurizing at least part of the stream S1 with absorption of heat and with at least partial vaporization of the liquid alkene; and

(iii) reacting the alkene obtained in (ii) with a hydroperoxide in the presence of at least one solvent and at least one catalyst to form a mixture comprising an alkene oxide and the at least one solvent,

wherein the alkene is propene, the hydroperoxide is hydrogen peroxide, the catalyst is a titanium silicalite catalyst and the solvent is methanol.

Claim 28 (New): A process as claimed in claim 27, wherein in (ii) the stream S1 is depressurized into at least one heat exchanger and the heat absorbed during depressurization is taken from at least one refrigerant to form a cooled refrigerant, and wherein the cooled refrigerant is used for cooling purposes in at least one sub-operation of the process.

Claim 29 (New): A process as claimed in claim 28, wherein the sub-operation of the process includes condensing a vapor which consists essentially of the alkene oxide and is obtained by separating the alkene oxide from a mixture (M1) comprising the alkene oxide and at least one solvent by distillation.

Claim 30 (New): A process as claimed in claim 29, wherein the mixture (M1) is obtained from a process comprising:

(iv) reacting the alkene obtained in (ii) with a hydroperoxide in the presence of at least one solvent and at least one catalyst to form a mixture (M0) comprising the alkene oxide, the alkene and the at least one solvent; and

(v) separating the alkene from the mixture (M0) to form a mixture (M1) comprising the alkene oxide and the at least one solvent.

Claim 31 (New): A process as claimed in claim 30, which further comprises:

(vi) dissolving the alkene obtained in (ii) in at least one of the solvents present in the reacting (iii) or the reacting (iv) to form a solution;

(vii) introducing the solution obtained in (vi) into an apparatus in which the reacting (iii) and (iv) is carried out.

Claim 32 (New): A process for preparing an alkene oxide, which comprises:

(i) providing a stream S1 comprising a compressed, liquid alkene;

(ii) depressurizing at least part of the stream S1 with absorption of heat and with at least partial vaporization of the liquid alkene;

(iii) reacting the alkene obtained in (ii) with a hydroperoxide in the presence of at least one solvent and at least one catalyst to form a mixture comprising the alkene oxide and the at least one solvent;

wherein the alkene is propene, the hydroperoxide is hydrogen peroxide, the catalyst is a titanium silicalite catalyst and the solvent is methanol,

wherein in (ii) the stream S1 is depressurized into at least one heat exchanger and the heat absorbed by the alkene during the depressurizing is taken from at least

one refrigerant to form a cooled refrigerant, and wherein the cooled refrigerant is used for cooling purposes in at least one sub-operation of the process,

wherein the sub-operation of the process includes condensing a vapor which consists essentially of the alkene oxide and is obtained by separating the alkene oxide from a mixture (M1) comprising the alkene oxide and the at least one solvent by distillation, and

wherein the mixture (M1) is obtained from a process comprising:

(iv) reacting the alkene obtained in (ii) with a hydroperoxide in the presence of at least one solvent and at least one catalyst to give a mixture (M0) comprising the alkene oxide, the alkene and the at least one solvent; and

(v) separating the alkene from the mixture (M0) to form a mixture (M1) comprising the alkene oxide at the at least one solvent; and

wherein the process further comprises:

(vi) dissolving the alkene obtained in (ii) in at least one of the solvents present during the reacting (iv) or the reacting (iii) to form a solution; and

(vii) introducing the solution obtained in (vi) into an apparatus in which the reacting (iii) or the reacting (iv) is carried out.